# DNM 650P

Vertical machining center specially developed for machining LCD/LED components and aluminium plate

Features

1. Aluminium plate specialized model.
   - Optimization of LCD/LED components and aluminum plate.
     - X axis : 1400 mm (55.1 inch), Table length : 1500 mm (59.1 inch)

2. Application of high strength roller LMG for optimised performance.

3. Achievement of the best acceleration / deceleration performance in its class and minimum tool change time for increased productivity.

4. Extended 2 door opening [1410mm (55.5 inch)] for easy loading of long workpieces
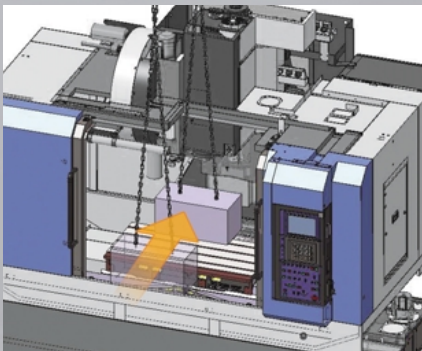
Improved Productivity

Pico Scope vs DGN
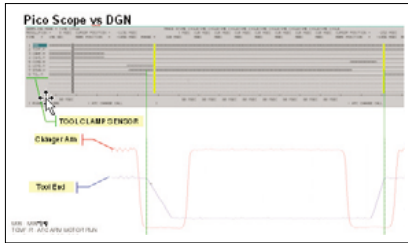
In accordance with application of Pico Scope & DGN, achievement of high speed tool replacement.

RoboDrill_Accel/Decel_Y-dir_F4000
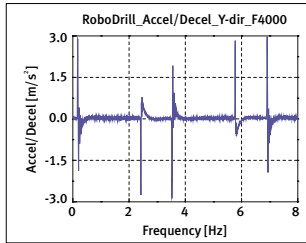
Optimised tuning achieves minimum vibration even using high speed spindle and fast acceleration / deceleration rates.

Fresh Air
Heated Air

Adoption of Heat discharge structure (Patent)
- Reduced Heat generation
- Guarantee high speed continual processing and processing precision

Machine Specifications

Features			DNM 650P
Travel	X-axis	mm (inch)	1400 (55.1)
	Y-axis	mm (inch)	670 (26.4)
	Z-axis	mm (inch)	625 (24.6)
	Distance from spdle nose to table top	mm (inch)	150 - 775 (5.9 - 30.5)
	Distance from spdle center to column	mm (inch)	747 (29.4)
	Door open width	mm (inch)	1410 (55.5)
Table	Table size	mm (inch)	1500 x 680 (59.1 x 26.8)
	Table loading capacity	kg (lb)	600 {1322.8}
Spindle	Max. spindle speed	r/min	8000 {12000}
	Spindle Taper		ISO #40 7/24 Taper
	Spindle motor power (cont. / 30 min)	kW (Hp)	15 / 18.5 (20.1 / 24.8) {11 / 15 (14.8 / 20.1)}
Feedrate	Rapid traverse rate (X / Y / Z)	m/min (ipm)	36 / 36 / 30 (1417.3 / 1417.3 / 1181.1)
	Cutting feedrate	mm/min (ipm)	15000 (590.6)
Automatic tool changer	Tool storage capacity	ea	cam 30 {cam 40}
	Max. tool diameter	mm (inch)	Ø80 (3.2) {Ø76 (3.0)}
	Max. tool diameter without adjacent tools	mm (inch)	Ø125 (4.9)
	Max. tool length	mm (inch)	300 (11.8)
	Max. tool weight	kg (lb)	8 (17.6)
Machine size	Machine height	mm (inch)	2815 (110.8)
	Machine dimension (L x W)	mm (inch)	2792 x 3350 (109.9 x 131.9)
	Machine weight	kg (lb)	7800 (17195.8)
Controller	NC system		DOOSAN FANUC i series

{ } : Option

NC Unit Specifications — Doosan Fanuc i series

AXES CONTROL

- Controlled axes	3 (X,Y,Z)
- Backlash compensation	
- Least command increment	0.001mm / 0.0001"
- Least input increment	0.001mm / 0.0001"
- Mirror image	
Reverse axis movement (setting screen and M-function)	
- Stored pitch error compensation	
Pitch error offset compensation for each axis	

INTERPOLATION & FEED FUNCTION

- 2nd reference point return	G30
- Cylinderical interpolation	G07.1
- Feedrate override (10% increments)	0 - 200 %
- Helical interpolation	
- Jog override (10% increments)	0 - 200 %
- Reference point return	G27, G28, G29
- Manual handle feedrate	0.1/0.01/0.001mm

SPINDLE & M-CODE FUNCTION

- Spindle speed command	S5 digits
- Spindle speed override (10% increments)	50-150 %
- Spindle orientation	
- M-code function	M3 digits

TOOL FUNCTION

- Cutter compensation C	G40, G41, G42
- Number of tool offsets	400 ea
- Tool length compensation	G43, G44, G49
- Tool offset memory C	
Geometry / Wear and Length / Radius offset memory	

PROGRAMMING & EDITING FUNCTION

- Tape code	ISO/EIA Automatic discrimination
- I/O interface	RS-232C
- Progam protect	
- Background editing	
- Absolute / Incremental programming	G90 / G91
- Automatic Coordinate system setting	
- Background editing	
- Canned cycle	G73, G74, G76, G80 - G89, G99
- Circular interpolation by radius programming	
- Custom macro B	
- Local / Machine coordinate system	G52 / G53
- No. of Registered programs	400 ea
- Optional block skip	
- Part program storage	640 m
- Playback	
- Rigid tapping	G84, G74

OTHERS FUNCTIONS (Operation, setting & Display, etc)

- Sub program	Up to 4 nesting
- Work coordinate system	G54 - G59
- Additional work coordinate system	
	G54.1 P1 - 48 (48 pairs)
- AI APC(Advanced Preview Control)	20 block preview
- Automatic corner override	G62
- Graphic display	Tool path drawing
- MDI / DISPLAY unit	
10.4" Color LCD, keyboard for data input (small), soft-keys	
- Optional angle chamfering / corner R	
- Polar coordinate command	G15 / G16
- Programmable mirror image	G50.1 / G51.1
- Run hour and part number display	
- Scaling	G50, G51
- Search function	Sequence NO. / Program NO.

Standard Feature

- Assembly & operation tools
- Ball screw nut cooling system
- Coolant tank & chip pan
- Door interlock for safety
- Flood coolant system
- Installation parts
- Internal screw conveyor
- Signal tower (red, yellow, green)
- Portable MPG
- Spindle head cooling system (12000 r/min **std.**)
- Splash guard
- Work light
- X, Y, Z Absolute pulse coder

Optional Feature

- 4th axis preparation
- Automatic power off
- Automatic tool length measurement
- Automatic workpiece measurement
- Cam ATC (40 tools)
- Chip conveyor & chip bucket
- Minimum Quantity Lubrication
- Oil skimmer
- Spindle head cooling system (only 8000 r/min **opt.**)
- Test bar
- Through spindle coolant

• The specifications and information above-mentioned may be changed without prior notice.
• For more details, please contact Doosan.

http://www.doosaninfracore.com/machinetools

Design and specifications are subject to change without prior notice.

i-ser EX 1104SP